

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 87-082

UPDATED WASTE DISCHARGE REQUIREMENTS FOR:

UNOCAL CHEMICALS DIVISION
UNOCAL CORPORATION
CONTRA COSTA PLANT
RODEO, CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board) finds that:

1. The Board on July 6, 1983, adopted Order No. 83-16 prescribing Waste Discharge Requirements (WDR) for Unocal Chemicals Division of Unocal Corporation, (formerly known as Union Oil Company, herein after called the discharger) which prescribed requirements for the discharge of wastes to waste management units.
2. The discharger owns and operates a coke calcining and power generating plant in Franklin Canyon, located two miles southeast of Rodeo, Contra Costa County. (See Attachment A) Surface water drainage is to Rodeo Creek, tributary to San Pablo Bay.
3. The facility uses rain and make-up water for plant operation, dust control and recovery of coke fines. This water is collected in two waste management units for recovery and recycling of coke fines, and water recovery for plant operations.
4. The regulations governing discharge of wastes to land are found in Title 23, Chapter 3, Subchapter 15 of the California Administrative Code (hereinafter called Subchapter 15). These regulations were substantially revised in 1984.
5. The Board advised the Discharger by letter dated October 22, 1986 that revised WDR were necessary, due to revisions to Subchapter 15.
6. The Discharger submitted a Report of Waste Discharge (ROWD) dated December 31, 1986 for revision of WDR, to comply with Subchapter 15.
7. The following activities at this site could adversely affect water quality and are the subject of these requirements:
 - a. Approximately 93,600 gallons per day (GPD) of wastewater from the boiler and cooling water system, blowdown, filter backwashing, and excess spray runoff from the uncalcined coke storage area is discharged to two waste management units. In addition, up to 20 million GPD of storm water discharges to the two waste management units.
 - b. The uncalcined coke (green coke) is stored in large piles on 17

acres of asphalted area. The piles are sprayed with wastewater from the waste management unit for dust control. Rainwater runoff and excess sprayed water drains from the westward sloping asphalted area back into the waste management units.

8. The first Class II waste management unit (Pond 1) is a concrete lined surface impoundment with a capacity of 220,000 gallons. Pond 1 serves to collect most of the coke carried by the waters from the asphalted areas, for recovery. The continuous overflow from Pond 1 enters the second waste management unit (Pond 2), a 3.4 million gallon capacity unlined surface impoundment. Waters from Pond 2 are recycled for the various on-site uses.
9. The wastewater in Pond 2 contains trace concentrations of heavy metals as well as organic halides, organic carbon and phenols. Phosphate may also be present as it is used for corrosion control in boilers and the cooling tower. Petroleum refinery coke is a waste. The waste water is leaching some of the metals and organic compounds out of the coke, making it a waste also.
10. The two surface impoundments are underlain by silty clay material to a depth of at least 20 feet with a permeability of less than 1×10^{-6} cm/sec. Seasonal high ground water levels may be as shallow as one foot below ground surface.
11. The site may not comply with the prescriptive siting standards of Subchapter 15, Section 2532 (a) which states that: "Existing... surface impoundments shall be operated to ensure that wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying ground water." Ground water monitoring data indicates wastes may be discharging or threatening to discharge to waters of the State.
12. The Class II waste management units may not comply with the construction standards of Subchapter 15, Section 2540(a) which states: "...Class II waste management units shall be designed and constructed to prevent migration of wastes from the waste management units to adjacent geologic materials, ground water, or surface water, during disposal operations, closure, and the post-closure maintenance period."
13. Subchapter 15, Section 2510(b) and (c) allows consideration of alternatives to prescriptive or construction standards.
14. This order requires the Discharger to provide information regarding the subsurface hydrogeologic characteristics and the construction of the waste management units so that compliance with Subchapter 15 siting and construction standards can be determined, or alternatives to prescriptive standards can be considered.
15. Subchapter 15, Section 2552 requires the Regional Board to establish Water Quality Protection Standards (WQPS) for appropriate indicator parameters reasonably expected to be in wastes discharged to each waste management unit. There is currently insufficient ground water data to establish WQPS. This order requires the Discharger to propose WQPS based on information obtained in the monitoring program. This

order will be revised to include values for WQPS upon a submittal acceptable to the Executive Officer.

16. The discharger has been requested to investigate the pond waters and sludges in order to determine if the ponds are subject to the Toxic Pits Cleanup Act (TPCA). If the site is subject to TPCA, the Discharger must undertake a hydrogeologic assessment.
17. The existing and potential beneficial uses of the ground water beneath and adjacent to the site are as follows:
 - a. Wildlife Habitat
 - b. Agricultural Water Supply
 - c. Industrial process supply water
 - d. Industrial Service supply
18. The existing and potential beneficial uses of Rodeo Creek and San Francisco Bay are:
 - a. Wildlife habitat
 - b. Warm fresh water habitat
 - c. Fish spawning
 - d. Water contact recreation
 - e. Non contact water recreation.
 - f. Preservation of Rare and Endangered Species.
 - g. Marine Habitat
 - h. Fish Migration
19. The Board adopted a revised Water Quality Plan for the San Francisco Bay Basin on July 1, 1982 and this order implements the water quality objectives stated in that plan.
20. This is a continuing project, therefore pursuant to Section 21166 of the California Administrative Code it is exempt from the California Environmental Quality Act.
21. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge, and has provided them with the opportunity to submit their written views and recommendations.
22. The Board in a public meeting heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that the Discharger, and any other person(s) that currently or in the future own this land or operate this facility, shall meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder and shall also comply with the following:

A. PROHIBITIONS

1. The discharge of wastes to waste management units other than those wastes described in Finding 7, is prohibited.
2. The discharge of wastes shall not cause pollution or nuisance as defined in Section 13050(1) and (m) of the California Water Code.

3. The discharge of any wastes from the ponds, process waters or runoff from the coke storage areas to surface or ground waters of the State is prohibited.
4. The discharger shall not cause the following conditions to exist in waters of the State.

a. Surface Waters

1. Floating, suspended, or deposited macroscopic particulate matter or foam.
2. Bottom deposits or aquatic growth.
3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.
4. Visible, floating, suspended or deposited oil or other products of hydrocarbon origin.
5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

b. Groundwater

1. The groundwater shall not be degraded or the beneficial uses impaired as a result of the waste disposal operation.

B. SPECIFICATIONS

1. The surface impoundments shall prevent migration of wastes to adjacent geologic materials, groundwater, or surface water, through the operation, closure, and post-closure periods.
2. The surface impoundments shall be operated to ensure that wastes will be a minimum of five feet above anticipated elevation of underlying ground water. An exception to this may be granted by the Board based on demonstration submitted by the Discharger pursuant to Section 2510(b) and (c) of Subchapter 15.
3. The surface impoundments shall have foundations capable of supporting the containment structures and capable of withstanding the hydraulic pressure gradients to prevent failure due to settlement, compression, or uplift.
4. The surface impoundments shall be designed and constructed to withstand ground accelerations associated with the maximum credible earthquake. [Section 2532(d)].

5. The surface impoundment shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100 year return period. [Section 2532(c)].
6. The surface impoundments shall be designed, constructed, and operated to prevent scouring of containment structures at points of discharge into impoundments and by wave action at the waterline.
7. The surface impoundments shall be operated to accomodate seasonal precipitation of a 10 year return frequency season and precipitation conditions of a 24 hour storm with a 1,000 year return frequency to prevent overtopping [Section 2546(a)]. In no case shall there be more than 2 feet (measured vertically) of freeboard in each surface impoundment.
8. The materials for containment structures shall have appropriate chemical and physical properties to insure containment of wastes at all times. Liner permeabilities shall be determined relative to the liquids contained in the surface impoundments and shall be determined by appropriate field test methods in accordance with accepted civil engineering practice. Earthen materials used in containment structures shall meet the specifications given in Section 2541(d) of Subchapter 15.
9. The containment structures of the surface impoundments shall be designed, constructed, and maintained to preclude failure as a result of rapid geologic changes.
10. Direct pipeline discharge to surface impoundments shall be equipped with devices to prevent overfilling.
11. The surface impoundments shall be modified with a liner or liners according to specifications and standards under Section 2542 of Subchapter 15, after approval of the proposed modifications by the Executive Officer. If multiple liners are used, the impoundment shall be modified with a leachate collection and removal system, according to the specifications and standards under Section 2543. An exception to these requirements may be granted by the Board based on a demonstration submitted by the Discharger pursuant to section 2510(b) and (c) of Subchapter 15.

C. PROVISIONS

1. The Discharger shall comply with all Prohibitions, Specifications, and Provisions of this Order, immediately upon adoption of this Order by the Board, except as noted below.
2. The Discharger shall comply with all applicable provisions of Subchapter 15, Title 23, California Administrative Code, relative to Class II Surface Impoundments including requirements with respect to siting criteria, construction standards, and monitoring requirements.

3. The Discharger shall demonstrate compliance with Prohibition A.3, Specifications B.1 through B.11, and Provision C.2, according to the following schedule:

- a. TASK: The Discharger shall submit a proposal acceptable to the Executive Officer for a ground water monitoring program which complies with the requirements of Article 5, Subchapter 15.

COMPLETION DATE: August 31, 1987

- b. TASK: The Discharger shall submit a detailed proposal and time schedule to demonstrate compliance with Prohibition A.3, Specification B.1 through B.11, and Provision C.2, or submit a proposal to demonstrate an exception pursuant to Section 2510(b) and (c).

COMPLETION DATE: September 30, 1987

- c. TASK: The discharger shall construct one new upgradient and three new pond monitoring wells in conformance with specifications detailed in EPA document "Ground Water Monitoring Technical Enforcement Guidance Document", published September 1986, for sale by the Government Printing Office. No well screen shall exceed 10 feet in length.

COMPLETION DATE; December 30, 1987

- d. Presently existing monitoring wells shall be properly abandoned and backfilled, after replacement by new monitoring wells.

COMPLETION DATE; DECEMBER 30, 1987

- e. In lieu of compliance with Tasks c. and d. above, the Discharger may demonstrate in a manner acceptable to the Executive Officer that the existing wells are adequate and in compliance with Subchapter 15. If the executive officer determines that the demonstration is not acceptable, the Discharger shall comply with Tasks c. and d.

COMPLETION DATE: September 15, 1987

- f. TASK: If the Discharger chooses to demonstrate an exception to any requirements of this provision, a complete demonstration shall be submitted.

COMPLETION DATE: May 31, 1988

- g. TASK: The Discharger shall demonstrate compliance with Prohibition A, Specification B.1 through B.11, and Provision C.2.

COMPLETION DATE: September 30, 1988

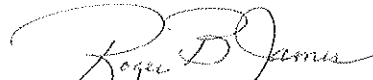
4. The Board shall be notified immediately of any slope failure occurring at the waste management unit containment structure, or surrounding area. Any failure which threatens the integrity of containment features or the waste management unit shall be promptly

corrected to the satisfaction of the Executive Officer.

5. The Discharger shall submit to the Board for approval, a contingency plan which addresses failure or breakdown of waste handling facilities or containment systems, including notification of any such failure, or any detection of waste in monitoring facilities, to the Regional Board. Submit the draft plan by February 28, 1988. The final plan should be submitted no later than 60 days after receiving comments on the plan, from the Executive Officer.
6. The Discharger shall comply with the attached self-monitoring program as adopted by the Board.
7. The Discharger shall notify the Board within 30 days after the completion of any partial or final closure activities. The Discharger shall certify under penalty of perjury that all closure activities were performed in accordance with the most recently approved closure plan and in accordance with all applicable regulations. The Discharger shall certify that the closed waste management unit shall be maintained in accordance with an approved post closure maintenance plan.
8. The Discharger shall maintain a copy of this Order at the site so as to be available at all times to site operating personnel.
9. This Board considers the property owner and site operator to have a continuing responsibility for correcting any problems which arise in the future as a result of this waste discharge or related operation.
10. The Discharger shall notify the Board in writing of any proposed change in the character, location, or quantity of this waste discharge, or ownership or responsibility for construction, operation, closure, or post closure maintenance of the waste management units. This notification shall be given prior to the effective date of the change and shall include a statement by the new discharger that construction, operation, closure, and post closure maintenance will be in compliance with any existing waste discharge requirements and any revisions thereof.
11. The Discharger shall maintain all devices or designed features installed in accordance with this Order such that they continue to operate as intended without interruption except as a result of failures which could not have been reasonably foreseen or prevented by the Discharger.

12. The Discharger shall permit the Board or its authorized representatives:
 - a. Entry upon the premises on which wastes are located or in which any required records are kept.
 - b. Access to copy any records required to be kept under the terms and conditions of this Order.
 - c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Order.
 - d. Sampling of any discharge or groundwater covered by this order.
13. Board Order No. 83-16 is hereby rescinded.
14. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes without appropriate permits from other agencies or organizations.

I, Roger B. James, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on July 15, 1987.



Roger B. James
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

UNOCAL CHEMICALS DIVISION

UNOCAL CORPORATION

RODEO, CONTRA COSTA COUNTY

ORDER NO. 87-082

CONSISTS OF

PART A

AND

PART B

PART A
UNOCAL CORPORATION
UNOCAL CHEMICALS DIVISION

A. GENERAL

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No.73-16. This Self-Monitoring Program is issued in accordance with Section C.3 of Regional Board Order No. 87-xxx.

The principal purposes of a self-monitoring program by a waste discharger are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of effluent standards of performance, pretreatment and toxicity standards, and other standards, and (4) to prepare water and wastewater quality inventories.

B. SAMPLING AND ANALYTICAL METHODS

Sampling

Sample collection, storage, and analyses shall be performed according to most recent version of Standard Methods for the Analysis of Wastewater and in accordance with an approved sampling and analysis plan.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

C. DEFINITION OF TERMS

1. A grab sample is a discrete sample collected at any time.
2. A composite sample is a sample composed of individual grab samples mixed in proportions varying not more than plus or minus five percent from the instantaneous rate of waste flow corresponding to each grab sample collected at regular intervals not greater than one hour, or collected by the use of continuous automatic sampling devices capable of attaining the proportional accuracy stipulated above throughout the period of discharge or 24 consecutive hours, whichever is shorter.
3. Receiving waters refers to any water which actually or potentially receives surface or groundwaters which pass into, through, or under the waste management units or contaminated soils. In this case the groundwater beneath and adjacent to the waste management units, the surface runoff from the site, the drainage ditches surrounding the site, Rodeo Creek, San Pablo Bay and San Francisco Bay are considered the receiving waters.

4. Standard observations refer to:

a. Evidence or presence in ground water monitoring wells of the following:

- 1) Floating and suspended materials of waste origin: presence or absence, source, and distance of travel.
- 2) Discoloration and turbidity: description of color, source, and nature of material.
- 3) Evidence of algal or other unusual growth presence or absence.

b. Perimeter of the waste management unit.

- 1) Evidence of liquid seepage from the waste management unit, estimated size of affected area. (Show affected area on map)
- 2) Evidence of algal or other unusual growth, presence or absence, characterization, mineral or salt deposition.
- 3) Evidence of erosion.

c. The waste management unit.

- 1) Evidence of algal or other unusual growth. Precipitation of sludge or minerals, quantity, nature and chemical composition.
- 2) Evidence of dike erosion.

D. SCHEDULE OF SAMPLING, ANALYSIS, AND OBSERVATIONS

The discharger is required to perform sampling, analysis, and observations according to the schedule specified in Part B, and the sampling and analysis plan.

E. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger, and shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.
2. Date and time of sampling.
3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used. A reference to a specific section of a reference required in Part A Section B is satisfactory.
5. Calculation of results.
6. Results of analyses, and detection limits for each analyses.

F. REPORTS TO BE FILED WITH THE BOARD

1. Written self-monitoring reports shall be filed by the 15th day of the month following the report period. In addition an annual report shall be filed as indicated in F.2. The reports shall be comprised of the following:

- a. Letter of Transmittal

A letter transmitting the essential points in each self-monitoring report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations, such as, operation and/or facilities modifications. If the discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

- b. Each monitoring report shall include a compliance evaluation summary sheet. This sheet shall contain:

- 1) The sample mean and the sample variance for all sample sets taken from all compliance points, and shall determine if the difference between the mean of each sample set and the water quality protection standard is significant at the 0.05 level using Cochran's Approximation to the Behrens-Fisher Student's t-test as described in Appendix II of Subchapter 15. The discharger may propose an alternative statistical procedure to be used in making this determination pursuant to Section 2555(h)(3) of Subchapter 15. If a statistically significant difference is found this shall be reported as a suspected requirement violation in the letter of transmittal.
- 2) A graphic description and map of the direction and elevation of groundwater flow and the piezometric surface under/around

the waste management unit, based upon the past and present water level elevations and pertinent visual observations.

- 3) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature, conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.
 - 4) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations. The chain of custody record.
- c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.
- 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods, are used the exact methodology must be submitted for review.
 - 2) In addition to the results of the analyses, laboratory quality control/quality assurance (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; the results of equipment and method blanks; the results of spiked and surrogate samples; the frequency of quality control analysis; and the name and qualifications of the person(s) performing the analyses.

2. CONTINGENCY REPORTING

- A. A report shall be made by telephone of any seepage or overflow from the waste management unit immediately after it is discovered. A written report shall be filed with the Board within five days. This report shall contain the following information:
- 1) a map showing the location(s) of any seepage or dike rupture.
 - 2) approximate rate of overflow.
 - 3) nature of effects; i.e. all pertinent observations and

- analyses; and
- 4) corrective measures underway or proposed.
- B. A report shall be made in writing to the Board within seven days if a statistically significant difference is found between a self-monitoring sample set and a WQPS. Notification shall indicate what WQPS(s) have been exceeded. The discharger shall immediately resample at the compliance point(s) where this difference has been found and analyze another sample set of at least four portions split in the laboratory from the source sample.
- C. If resampling and analysis confirms the earlier finding of a statistically significant difference between self-monitoring results and WQPS(s) the discharger must submit to the Board within 90 days an amended Report of Waste Discharge for establishment of a verification monitoring program meeting the requirements of Section 2557 of Subchapter 15. This submittal shall include the information required in Section 2556(b)(2) of Subchapter 15.
- D. The discharger must notify the Board within seven days if the verification monitoring program finds a statistically significant difference between samples from the verification monitoring program point of compliance and the WQPS(s).
- E. If such a difference or differences are found by the verification monitoring program, it will be concluded that the discharger is out of compliance with this Order. In this event the discharger shall submit within 180 days an amended Report of Waste Discharge requesting authorization to establish a corrective action program meeting the requirements of Section 2558 of Subchapter 15. This submittal shall include the information required in Section 2557(g)(3) of Subchapter 15.
3. By January 31 of each year the discharger shall submit an annual report to the Board covering the previous calendar year. This report shall contain:
- a. Tabular and graphical summaries of the monitoring data obtained during the previous year.
- b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements.
- c. A map showing the waste management units, monitoring well locations, ground and casing point measuring elevations and data on elevations at pond sampling and freeboard measuring locations.
- d. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.
- e. Pond water analytic data.

4. A boring log shall be submitted for each sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 30 days after well installation.
 - a. For all monitoring wells established for this program continuous core samples must be taken in all borings, unless multiple wells are to be constructed in the immediate vicinity, in which case only the deeper boring would need to be continuously sampled. Each boring log must include the name, registration number and signature of the supervising geologist, the name of the person actually logging the hole, the name of the drilling company, type of drilling method used, grain size distribution analysis, soil moisture content, blow count, sample recovery rate, initial and stabilized water levels, in-place permeability, and ground surface elevation. Soil and clay samples should be retained for chemical analyses to determine if pollution or adsorption has occurred from pond seepage.
 - b. For all monitoring wells established for this program, well construction details must include a sieve analysis of the formation and sand pack; the rationale for the selected slot size and sand pack; and the method used to place the sand pack, seal, and grout. Wells must be screened over the full length of the aquifer, and the sand pack cannot extend more than one foot above the screened interval. The well annulus must be sealed with bentonite concrete and a surface concrete seal must be placed at the top of the well. All wells must be surveyed to a clearly marked common reference point.
 - c. For all monitoring wells established for this program transmissivity, hydraulic conductivity and gradient must be determined.

Part B

A. DESCRIPTION OF OBSERVATION AND SAMPLING STATIONS

1. Land Observation and Sampling Stations

<u>Station</u>	<u>Description</u>
A-1 thru A-'n'	Stations at 50 foot intervals around the perimeter of Pond 1.
B-1 thru B-'n'	Stations at 100 foot intervals around the perimeter of Pond 2.

2. Ground Water Monitoring Wells

<u>Station</u>	<u>Description</u>
W1	North of Pond 2
W2	West of Pond 2
W3	South of Pond 2
G-1 thru G-'n'	The Discharger is to install one new upgradient and three new downgradient ground water monitoring wells as provided in Provision No. 3c, 3d, and 3e of Order No. 87-082.

B. SCHEDULE OF OBSERVATIONS AND SAMPLING ANALYSIS

1. Observations

<u>Stations</u>	<u>Frequency</u>	<u>Observations</u>
A-1 thru A-'n'	Bi-weekly, October 1 to May 1; monthly, May 1 to October 1.	Inspection to determine presence of overflow, seeps or other indications of wastes leaving the waste management units. Standard observations shall be made as defined in Part A.
B-1 thru B-'n'	Bi-weekly, October 1 to May 1; monthly, May 1 to October 1.	
Ponds 1 and 2	Biweekly, October 1 to May 1; monthly, May 1 to October 1	Observe available pond freeboards.

If any pond is observed to have less than the minimum freeboard specified in these requirements, the Board shall immediately be notified by

telephone. Notification shall include reporting on interim measures taken to maximize available freeboard. A written report shall be sent to the Board within 48 hours.

2. Sampling and Analysis

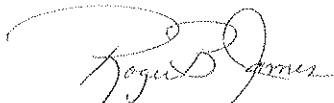
The schedule of sampling and analysis shall be that given in Table 1 (attached).

C. Provisions

1. Self monitoring reports containing data on monitoring well measurements and pond freeboard shall be filed quarterly, by the fifteenth of the following month.
2. Annual reports shall contain maps of the waste management units and all monitoring wells, together with graphs, well and pond water data.

I, Roger B. James , Executive Officer, hereby certify that the foregoing Self Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 87-082.
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer, or request from the Discharger.


Roger B. James
Executive Officer

July 16, 1987
Date Ordered.

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	POND 1	POND 2	WELL W1	WELL W2	WELL W3
TYPE OF SAMPLE	G	G	G	G	G
Flow Rate (mgd)					
BOD, 5-day, 20°C, or COD (mg/l & kg/day)					
Chlorine Residual & Dos- age (mg/l & kg/day)					
Settleable Matter (ml/1-hr. & cu. ft./day)					
Total Suspended Matter (mg/l & kg/day)					
Oil and Grease (mg/l & kg/day)					
Coliform (Total or Fecal) (MPN/100 ml) per req't					
Fish Toxicity 96-hr. TL % Surv'l in undiluted waste					
Ammonia Nitrogen (mg/l & kg/day)					
Nitrate Nitrogen (mg/l & kg/day)					
Nitrite Nitrogen (mg/l & kg/day)					
Total Organic Nitrogen (mg/l & kg/day)					
Total Phosphate (mg/l & kg/day)					
Turbidity (Jackson Turbidity Units)					
pH (units)	Q	Q	Q	Q	Q
Dissolved Oxygen (mg/l and % Saturation)					
Temperature (°C)	Q	Q	Q	Q	Q
Apparent Color (color units)					
Secchi Disc (inches)					
Sulfides (if DO<5.0 mg/l)					
Total & Dissolved (mg/l)					
Arsenic (mg/l & kg/day)	Q	Q			
Cadmium (mg/l & kg/day)					
Chromium, Total (mg/l & kg/day)	Q	Q			
Copper (mg/l & kg/day)					
Cyanide (mg/l & kg/day)	Q	Q			
Silver (mg/l & kg/day)					
Lead (mg/l & kg/day)	Q	Q			
ELECTRICAL CONDUCTIVITY (µmho/cm)	Q	Q	Q	Q	Q

TABLE I (continued)
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

Sampling Station	POND 1	POND 2	WELL W1	WELL W2	WELL W3								
TYPE OF SAMPLE	G	G	G	G	G								
Mercury (mg/l & kg/day)	Q	Q											
Nickel (mg/l & kg/day)	Q	Q											
Zinc (mg/l & kg/day)													
PHENOLIC COMPOUNDS (mg/l & kg/day)	Q	Q											
All Applicable Standard Observations													
Bottom Sediment Analyses and Observations													
Total Identifiable Chlorinated Hydrocarbons (mg/l & kg/day)													
TOTAL SUSPENDED SOLIDS	Q	Q											
TOTAL DISSOLVED SOLIDS	Q	Q	Q	Q	Q								
TOTAL ORGANIC CARBON	Q	Q	Q	Q	Q								
SULFUR COMPOUNDS	Q	Q											
PHOSPHATES	Q	Q											

LEGEND FOR TABLE

TYPES OF SAMPLES

G = grab sample
 C-24 = composite sample - 24-hour
 C-X = composite sample - X hours
 (used when discharge does not
 continue for 24-hour period)
 Cont = continuous sampling
 DI = depth-integrated sample
 BS = bottom sediment sample
 O = observation

TYPES OF STATIONS

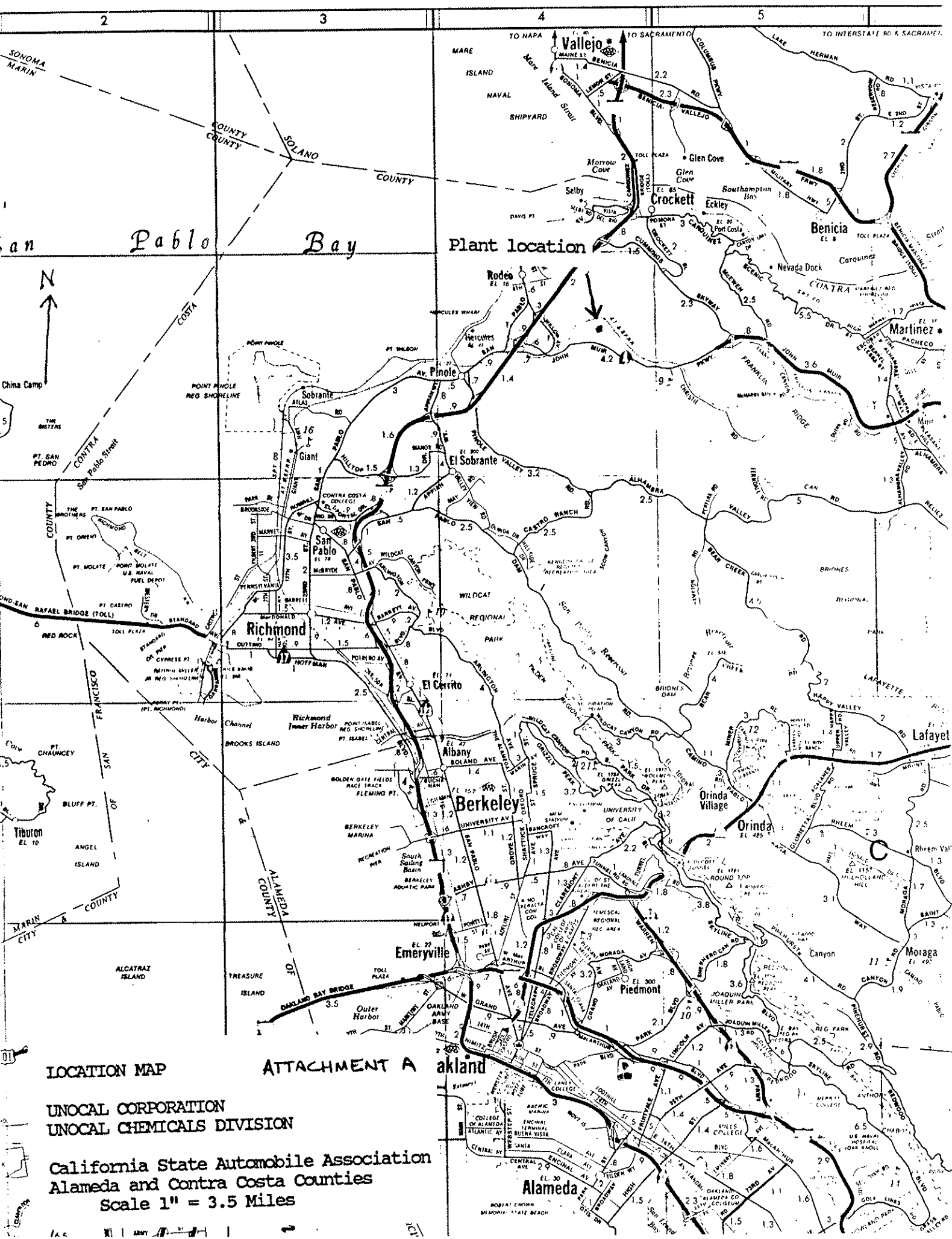
I = intake and/or water supply stations
 A = treatment facility influent stations
 E = waste effluent stations
 C = receiving water stations
 P = treatment facilities perimeter stations
 L = basin and/or pond levee stations
 B = bottom sediment stations
 G = groundwater stations

FREQUENCY OF SAMPLING

E = each occurrence
 H = once each hour
 D = once each day
 W = once each week
 M = once each month
 Y = once each year

2/H = twice per hour
 2/W = 2 days per week
 5/W = 5 days per week
 2/M = 2 days per month
 2/Y = once in March and
 once in September
 Q = quarterly, once in
 March, June, Sept.
 and December

2H = every 2 hours
 2D = every 2 days
 2W = every 2 weeks
 3M = every 3 months
 Cont = continuous

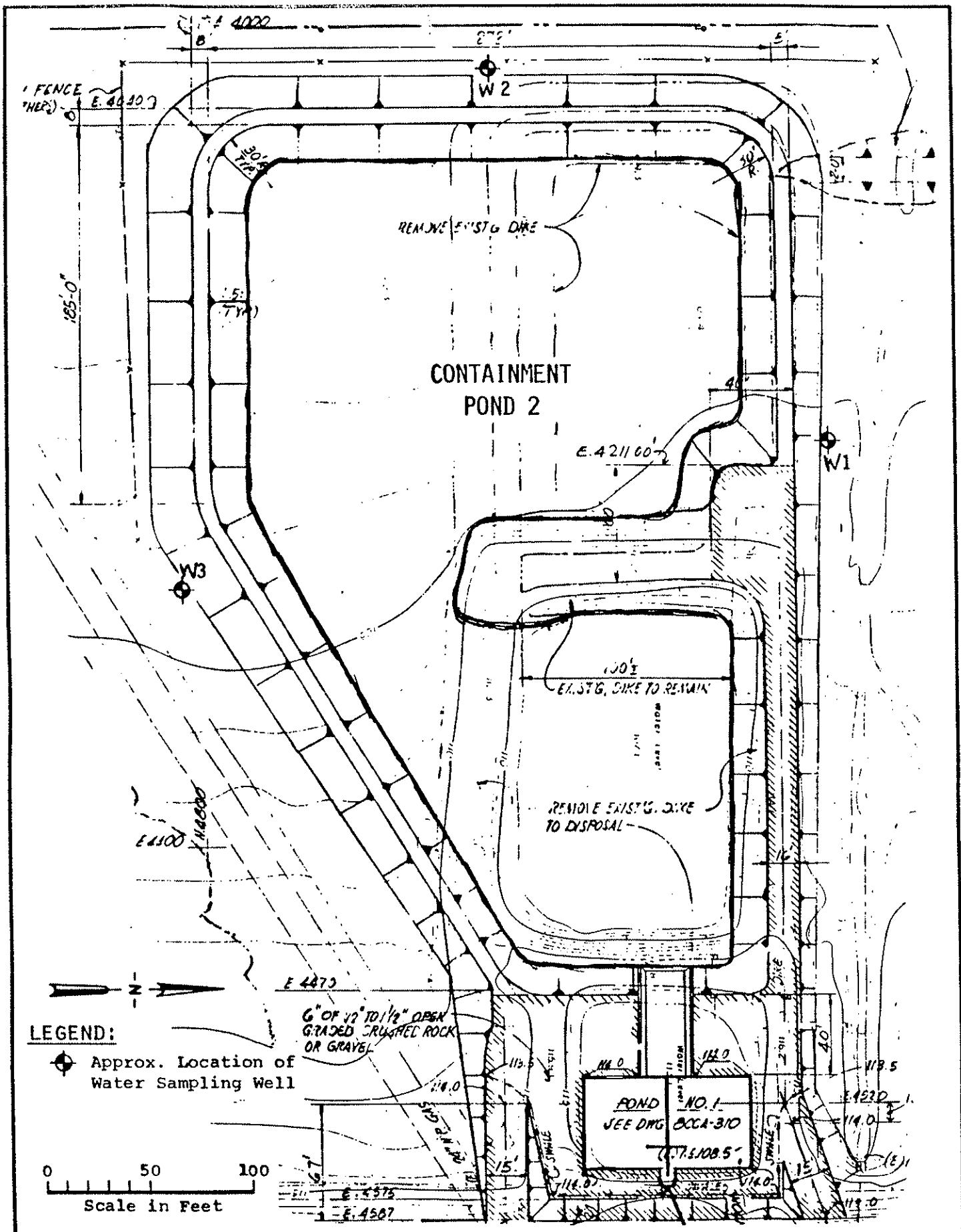


LOCATION MAP

ATTACHMENT A

UNOCAL CORPORATION
UNOCAL CHEMICALS DIVISION

California State Automobile Association
Alameda and Contra Costa Counties
Scale 1" = 3.5 Miles



Project No. 16651A
Woodward-Clyde Consultants

SITE PLAN
UNOCAL CONTRA COSTA PLANT
Rodeo, California

Figure 1